meat can be properly and constantly basted by this process, which means that it cannot possess the best qualities produced by proper roasting. The *rôtisseur*, whom Brillat Savarin considered to be like the poet "born not made," was skilful with the spit, and certainly no oven-roasted bird can approach one cooked in that manner. Mr. Knight becomes confused in regard to the frying processes. To dry-fry, the French word *sauter* is alone applicable; to wet-fry, the term is *frire*. By the former, the thing fried is supposed to be tossed or "made to leap," hence *sauter;* by the latter, it is boiled in seething fat or oil—not in a *sauté*-pan, which is too shallow, but in a *friture*-pan or frying-kettle. Clarified beef suet or prime fat is superior to oil for many things; it does not heat so rapidly, nor does it boil over as the latter is prone to do. The object of stewing is not to extract all the nutritive juices of food. On the contrary, in all the best examples of the process, those juices are sealed up to begin with as much as possible, by blanching in the case of white meat, or dry frying (the *faire revenir* of French cookery) in that of brown. After blanching, white meat is refreshed, and then laid on a couch of vegetables covered with broth and very gently stewed; while after having been seized, brown meat is moistened with warm broth just brought to the boil once, and then simmered gently till done. Of braising there are several processes, white meat being done in one way, brown in another. The *faire revenir* process is carried out in regard to the latter, and this is now also done in the case of *bœuf à la mode*—"mettez-la," says Dubois, "dans une braisière ou casserole longue avec du lard fondu; faites-la revenir sur un feu modéré jusqu'à ce qu'elle soit bien saisie et colorée: mouillez alors la viande." Lastly, with reference to soups, we should call a perfect *consommé* the finest rather than the "richest" form of soup; the latter term would be better applied to bisques, thick turtle, and all to which eggs, butter and cream are added. These few slips however are, as we have said, excusable on the part of an author who has given so much valuable information in the major portion of his work. In recommending it to all educated readers who are interested in the subject, we would say to those who may desire to use it in their instruction of the illiterate—do not lose sight of the fact that over-elaboration of the scientific and theoretical aspect of cookery may tend to the somewhat perfunctory teaching of its practical side. For this reason, as far as teaching in board-schools and evening continuation classes is concerned, let sound practical instruction be the main point, with just sufficient of theoretical teaching to explain the scientific reasons which render this, that, and the other step necessary in the different methods of cooking, and why various food-stuffs differ in nourishing value.

THE STUDY OF FUNGI.

Introduction to the Study of Fungi, their Organography, Classification, and Distribution; for the use of Collectors. By M. C. Cooke, M.A., LL.D., A.L.S. Pp. iv.+360. (London: Adam and Charles Black, 1895.)

AS a terminal group, the Fungi possess but little interest for those whose aim is to gain an insight into the general scheme of evolution of the plant-world. On the other hand, it may safely be asserted, without fear of contradiction, that no group of plants has better repaid the investigations of the specialist, as illustrated by the brilliant discoveries of De Bary, Brefeld, Ward, and others. The important part played by parasitic fungi in connection with numerous plant and animal diseases has of late years also attracted considerable attention, and with the exception of Great Britain, almost every civilised country in the world has one or more institutions specially devoted to the investigation of this branch of the subject. Another branch of the study deals with the classification or systematic arrangement of fungi, the importance of which can only be realised when it is known that above forty thousand described species have to be dealt with in such a manner that their specific individuality, affinities, location in the scheme of classification, and distribution, may be easily accessible to workers in other branches of the study. In the work under consideration, the author has given the amount of morphological information he considers necessary for the systematist to possess, at the same time indicating the additions to our knowledge resulting from the investigation of the life-history of individual species; but it is in the sections devoted to classification and distribution that Dr. Cooke appears at his best, and here we find embodied the matured experience gained during the author's connection with Kew, where he had charge of the unrivalled collection of fungi, with its thousands of type specimens, in addition to the opportunities of examining numerous collections, received at different periods, from every quarter of the globe. In the chapter on classification, Brefeld's researches are analysed, and his proposed system of classification given in a tabular form. Saccardo's arrangement of the fungi is also thoroughly explained and criticised, as "it will doubtless come into universal use where expedients are valued rather for their utility than their consistency." The above quotation refers to the elevation of the Friesian sub-genera of the Agaricini to generic rank by Saccardo; and, while admitting that there is an apparent trifling with a preconceived conception of generic value in elevating to the same level, the sub-genera and genera of the same author, more especially when the genera are so broad, as in the Friesian system; yet perhaps in these days utility is of more value than consistency in a purely systematic work, the real value of which depends on the ease with which the organisms of which it treats can be recognised, and this can usually be more readily accomplished by the use of artificial methods than by adhering strictly to a supposed uniform standard of relationship, at all events so far as species and genera are concerned.

The author advocates the continued use of the term *spore* for the reproductive body of the Basidiomycetes, and *sporidium* for that of the Ascomycetes; with this we cannot agree, considering *basidiospore* for the former, and *ascospore* for the latter as conveying more definite information, and further, freeing the subject from the very vague term spore.

We cannot accept either of the following statements, which certainly should be qualified in a future edition of the book. "Of the 9600 known species of Hymenomycetal Fungi, really parasitic species are almost, if not wholly unknown." "All the parasites on living leaves

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which are not of insect origin, are Fungi." *Agaricus melleus* and many species of *Polyporus* are too well known as parasites, and in the tropics coriaceous leaves of evergreen plants are victims to the attacks of parasitic lichens and algæ; lichens are mentioned, as the author holds to his previous view, that these are entirely distinct from fungi, giving a summary of his views on this subject.

We should look elsewhere in vain for anything approaching the amount of information contained in the section devoted to the geographical distribution of fungi, a chapter which indicates not only what has been done, but also what remains to be done.

A noteworthy feature of the book is the full bibliography given at the end of each chapter, treating of the special subject dealt with. There is also a glossary explaining the scientific terms adopted. The index might with advantage have been fuller. The numerous illustrations have in most instances done service before, but nevertheless serve to elucidate the text; and on the whole it may be said that no one aspiring to the study of fungi from the systematic standpoint, can afford to ignore the present work. GEO. MASSEE.

OUR BOOK SHELF.

Rambles in Japan, the Land of the Rising Sun. By H. B. Tristram, D.D., LL.D., F.R.S. With forty-five illustrations by Edward Whymper, from sketches and photographs. (London: The Religious Tract Society, 1895.)

CANON TRISTRAM has done well in putting together this record of a visit to Japan, which, although not "recent" when measured by the rapidity of the present march of Japanese history, occurred only a few years ago. The object of the visit was mainly to study the working of Christian missions on the spot; and this is a welcome fact, because it ensures an audience for what the author has to say, who cannot but profit greatly from the acute observations and calm judgments which he records. While making no pretensions to scientific treatment, Canon Tristram's book is to the average run of tourist twaddle on Japan, as a good novel is to a "penny dreadful." It is truthful, well-written, and inspires confidence. Under the guidance of his daughter, who as a missionary had acquired the Japanese language, Dr. Tristram visited some parts of the islands remote from the tourist-track, although all well-known to European residents in Japan. His instincts as a field-naturalist kept him on the alert for all that was to be seen of animal and plant life; and although we fear the precipitancy with which he yielded to temptation in the matter of ivory-carvings and rare china, must have told on his natural history collections, he seems to have brought back a good many plants, insects and birds.

A great number of interesting facts and phenomena are touched upon. The wonderful results of fancy gardening in Tokyo in dwarfing and grafting, seem to culminate in a maple-tree with seven large branches, the foliage of each having a different tint, varying from copper-colour to greenish-white. The art of the Japanese in domesticating such sensitive birds as robins, titmice and warblers, is cited as an instance of the great sympathy for nature which distinguishes the Japanese. Dr. Tristram found that the localities of many of the birds, brought to the seaports for sale, were wrongly described on the labels which were affixed in Europe, and he instances one case in which a species found only in the forests of Nikko, from 3000 to 8000 feet above the sea, had its habitat given as Yokohama. The author is inclined to rank Fujisan second in beauty to the Peak of Tenerife, and he remarks that no Japanese artist would think of painting this much-portrayed mountain from nature, but always from the paintings of the "old masters" of Japanese art. Richly wooded as Japan is, the universality of the use of charcoal as a domestic fuel has necessitated special forest-legislation, based on the strict system of re-planting practised in Germany. Although Dr. Tristram necessarily depended much on second-hand information, he avoids the familiar pitfalls of the uneducated writer, and but for a printer's error in the population of Nagoya, there seems little wanting in the way of accuracy.

The illustrations add greatly to the interest of the book; but while all of them are worthy of the name they bear, it is almost with a feeling of shock that one reads "Whymper" on several ordinary half-tone process blocks.

A Manual of Botany. By Prof. J. Reynolds Green, F.R.S., Sc.D., F.L.S. Vol. I. Morphology and Anatomy. Pp. x + 398. (London: J. and A. Churchill, 1895.)

PROF. GREEN has set himself a difficult task in attempting to put new wine into old bottles. Bentley's book, on which the present work is based, was admirable in its time, but to-day it strikes one as being somewhat inflexible both in style and ideas. It is true that in the volume before us there is a great deal of very useful information, which is put better and more clearly than elsewhere; in fact some of the subjects are so well treated, that we cannot help regretting that Prof. Green did not see his way to give us an altogether original work.

We notice, however, with regret, that the morphology of the inflorescence is here somewhat hazy, and it seems a pity that Eichler and Gray were not more closely followed, since their views, especially those advanced by the former, are certainly the most philosophical, as well as the most lucid and comprehensive of any which have as yet been put forward. The treatment accorded to the stele does not strike us very favourably; the student may be well forgiven if he abandons all attempts to understand the complex and apparently irreconcilable ideas embodied in the expressions "monostely" and "polystely" respectively.

The position of the axis should have been marked in the floral diagrams, as without it, one fails to recognise the correct orientation of the parts of the flower. This need is the more obvious in cases where the actual position of the axis varies in figures on the same page, as in Figs. 248 and 250, in which it falls above and at the side respectively.

But notwithstanding these faults, the book provides, on the whole, a clear and comprehensive account of the structure of plants.

Rope Driving. By John F. Flather, Ph.B., M.M.E. Pp. 230, and figs. 92. (New York: John Wiley and Sons. London: Chapman and Hall, Limited, 1895.)

THIS is a handy little book on the transmission of power by means of rope gearing; it contains a large amount of sound information on the various arrangements of driving gear, and their design, the best speeds at which ropes should be run, and the tension to which they should be exposed. The reasons of decay and means of preservation of ropes are succinctly dealt with; as also are the relative advantages of cotton and manilla hemp ropes when worked under different conditions. The book is certainly worthy of a place in any technical library, as the subject is one which is daily engaging increased attention, affecting as it does the efficient driving of mills, factories, and electric installations, and the transmission of motive power to places more or less isolated from its source.

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